

What is Claimed is:

1. In an Integrated Broadcasting System (IBS) transmitting moving images according to real-time/reserved schedules to output terminals of all areas or advertisement points by using a centrally controlled method based on networks including LAN, WAN and

5 Internet and controlling schedules of advertisement/broadcasting, said system controlling and managing advertisement/broadcasting centrally based on networks and comprising:

an IBS Control Server (IBSCS) performing a main role of IBS and a control function about general advertisement and broadcasting schedules, a control function about urgent
10 broadcasting, a management function about customer/terminal information and a control function about contents monitoring and contents transmitting and receiving;

a Security Server (SC) providing a function of encryption and compression of important contents when each broadcasting content is uploaded or downloaded between servers or areas and using a protection technique of transmission path tunneling that cuts off outer
15 illegal usage of contents in transmission processes for security, wherein said protection technique of transmission path tunneling is based on general network techniques embodying data encapsulation in data transmission between OSI 7 Layers;

an IBS Administrator Interface (IBSAI) used as a management tool of GUI environment and providing a function of every environmental setup for driving said IBS and
20 appointment of broadcasting schedules, a management function of broadcasting points, a function of contents grouping, a graphic management function for centrally controlling contents management, schedule management, point management, admin management including manager registration and manager privilege selection and having no restriction of OS platforms in installation and operation of said IBS owing to the

development in JAVA environment;

an IBS Terminal Server (IBSTS) being driven at each broadcasting terminal of said IBS and downloading broadcasting time and contents that would play at the broadcasting time and playing broadcasting through various output mediums including displaying
5 devices using various types of monitors comprising a CRT, a PDP, an LCD and a projector being a projecting device, wherein all playing environments about screen structure, the number of times of broadcasting play, screen partition and broadcasting time are downloaded from said IBSCS;

a plurality of IBS Media Servers (IBSMS) organized by server clustering comprising a
10 Content Sender/Receiver Control Unit for in real time transmitting created, modified and deleted contents from Said IBSCS and a Content Database for receiving and storing original advertisement contents, said IBSMS transmitting synchronized contents to Said IBSTS;

a Traffic Management Server (TMS) making broadcasting contents be downloaded from
15 an IBSMS with the best efficiency by using information of network distance between said IBSTS and said IBSMS and system resources of said IBSMS and modulating load distribution and thereby providing a path through which advertisement contents and broadcasting schedules can be downloaded optimally and providing a load balancing function between said IBSMS having the same functions by using server information
20 including CPU, memory and server information of session, an Intelligent Global Load Balancing (GLB) function and a Server Load Balancing (SLB) function and managing transmission traffic of contents and, wherein said GLB distributes PING, HOP between each of said IBS Media Servers and POP and load between POPs distributed locally according to a policy defined by a manager, and said SLB distributes server load

between said IBS Media Servers having the same contents by using CPU, memory and session; and

a Content Distribution Server (CDS) monitoring contents change of said IBSMS automatically and distributing changed contents to pre-designated servers in real time
5 and synchronizing contents of said pre-designated servers and making said IBSMS always keep the same contents,

wherein said IBSCS, SS, IBSAI, IBSTS, IBSMS, TMS and CDS operate organically one another and performs organization and management of broadcasting schedules, urgent broadcasting processes and screen partition processes and transmit moving
10 images to every region or output medium of advertisement points by using a centrally controlled method on networks in real time or according to reserved schedules

2. A system controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 1, wherein it is characterized in that said IBSCS comprises a Broadcasting Schedule Control Unit, a Content Monitoring Control Unit, a
15 Content Sender/Receiver Control Unit, a Shop Management Database Control Unit, a General Broadcasting Schedule Database, an Urgent Broadcasting Schedule Database, a Content Database and a Shop Management Database, and

said Broadcasting Schedule Control Unit stores general broadcasting schedules and urgent broadcasting schedules set up at said IBSAI in a General Broadcasting Schedule
20 Database and an Urgent Broadcasting Schedule Database respectively and takes charge of every control related to schedule transmission when said IBS Terminal Server demands broadcasting schedules, and

said Content Monitoring Control Unit performs monitoring about contents stored in said IBS Control Server in real time and if contents of specifically monitored directories

stored in said IBS Control Server are modified, created and deleted, then said Content Monitoring Control Unit can monitor said modified, created and deleted contents at Kernel Level in real time and transmit commands for contents synchronization to said Content Sender/Receiver Control Unit, and

- 5 said Content Sender/Receiver Control Unit transmits said modified, deleted and created contents to a plurality of said IBS Media Servers and distribution of said contents in real time by said Content Monitoring Control Unit and said Content Sender/Receiver Control Unit, and

- said Shop Management Database Control Unit has function of login authentication of
10 said IBS Terminal Server, function of registration, modification and deletion of said IBS Terminal Server (terminal) and function of IP address confirmation for checking the existence of said IBS Terminal Server in various network environments including ADSL and leased lines, and

- said General Broadcasting Schedule Database stores information of broadcasting
15 terminals, broadcasting time and broadcasting schedules, and

said Urgent Broadcasting Schedule Database is a space which stores information of urgent broadcasting and has the same structure with said General Broadcasting Schedule Database, and

- said Content Database is a space storing contents of advertisements or broadcasting and
20 stores directory and file structure using file system of said IBS Control Server, and
said Shop Management Database stores shop information about said IBS Terminal Server and information about Identification and password.

3. A system controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 1, wherein it is characterized in that said IBSAI

comprises:

a general broadcasting schedule registration unit providing function of controlling set-up, modification and deletion of general broadcasting schedules organized by date and by terminal;

5 an urgent broadcasting schedule registration unit providing function of controlling set-up, modification and deletion of urgent broadcasting schedules organized by date and by terminal, wherein the urgent broadcasting is distinguished from the general broadcasting;

a contents synchronization unit providing function of uploading and downloading
10 contents from and to said remote IBS Control Server and deleting contents of servers;
and

a terminal registration unit providing function for registering Identification, password and server environments of said IBS Terminal Server for transmission of broadcasting.

4. A system controlling and managing advertisement/broadcasting centrally based on
15 networks as set forth in claim 1, wherein it is characterized in that said IBSTSI
comprises:

a broadcasting screen control unit controlling how to arrange several panels in one frame;

a login control unit controlling authentication of IP address, other information of
20 connection environment set-up, Identification and password of said IBS Control Server
connecting for login authentication of said IBS Terminal Server;

a Content Sender/Receiver Control Unit transmitting and receiving contents from the optimal server among said plurality of IBS Media Servers, wherein said transmitted and received contents correspond to modified, deleted and created contents and said Content

Sender/Receiver Control Unit distributes said contents in real time; and
a Content Database being a physical hard disk storing contents received from said
Content Sender/Receiver Control Unit.

5 5. A system controlling and managing advertisement/broadcasting centrally based on
networks as set forth in claim 1, wherein it is characterized in that said TMS comprises:
a GLB Master to select the optimal POP in case networks are distributed to organize
several POPs;

an SLB master to embody server load balancing between IBS Media servers;

a communication module for data transmission;

10 a control unit controlling each communication module; and
a database for storing GLB information and SLB information.

6. A system controlling and managing advertisement/broadcasting centrally based on
networks as set forth in claim 1, wherein it is characterized in that said TMS comprises:
a plurality of listen sockets always maintaining wait status in order to check whether

15 data for decryption is generated or not;

an SSL decryption performing decryption; and

a plurality of connection communication modules connected to said security client, and
said security client loaded in said IBSTS comprises:

a plurality of listen sockets always maintaining wait status in order to check whether

20 data for encryption is generated or not;

an SSL encryption performing encryption; and

a plurality of connection communication modules for transmitting said encrypted data to
said Security Server.

7. A system controlling and managing advertisement/broadcasting centrally based on

networks as set forth in claim 1, wherein it is characterized in that said IBSCS, SS, IBSAI, IBSTS, IBSMS, TMS and CDS are server modules embodied in software form and can be organized in each hardware separately and said CDS, TMS, SS and IBSCS can be installed in a hardware at the same time.

5 8. A system controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 1, wherein it is characterized in that a schedule database for general broadcasting or urgent broadcasting of said IBSCS stores information of company name, group name, TID that is terminal ID inputted when a terminal is registered, shop name, date and FCS as file form.

10 9. A system controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 1, wherein it is characterized in that said IBSTS is a PC or a server installed each broadcasting terminal.

10. A system controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 1, wherein it is characterized in that a frame denotes a
15 whole screen and a panel denotes each separated screen and said IBS embodies basic scheduling by combining basic elements of:

a unit content (UC) denoting each multimedia file;

a group content server (GCS) denoting an assembly of said UC files;

a panel content service (PCS) denoting an assembly of said GCSes; and

20 an FCS (frame content schedule) denoting an assembly of said PCS, GCS and UC, said FCS being a schedule unit for a day or a certain period.

11. A system controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 10, wherein it is characterized in that in organizing frames and broadcasting contents with said basic scheduling elements although the names of

companies name are identical basically, said frames and broadcasting contents are organized differently each other pursuant to broadcasting terminals, and each panel in a frame is a space capable of playing advertisement and broadcasting by using UC, GCS, PCS and FCS that are single contents scheduled previously.

5 12. A system controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 1, wherein it is characterized in that a user gets authentication of an open key through a plurality of authentication methods including Identification, password and finger print and connects with a server program of said IBS and an authenticated user can use a server application and said user can protect contents
10 and important data by using a method for encryption or compression according to each step during data transmission on Internet section.

13. A system controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 1, wherein it is characterized in that said IBS terminals are registered and managed through said IBSTS and in registration of terminals,
15 terminal Identification and password are inputted and terminals are registered and detail information about hardware of the terminals' computers is recorded and the inputted Information comprises CPU of PC, memory capacity, disk capacity, information about whether ADSL is used or not, operator's name, operator's telephone number, operator's mobile phone number and basic frame size.

20 14. A system controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 10, wherein it is characterized in that in designating a frame for organization of said FCS, a panel's width and height rate, a contents type in a panel, appointment of real contents files or URL, ON/OFF of volume, duration time of multimedia files are designated and said contents type in a panel is selected among

News, Web, URL, Media, Html, PPT, TV, and real time streaming server connection and further registration is possible later and in case of selecting media type contents, it is possible to register PCS files registered previously and corresponding PCS selection lists provide function of icon view and list view among folder view options of a

5 Window searcher.

15. A system controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 14, wherein it is characterized in that in case organizing broadcasting schedules, Information about broadcasting media type, kind of contents, ON/OFF of volume, screen rate and broadcasting duration time can be organized
10 respectively and Frame size can be set up freely and broadcasting media type supports various types including News, Web, URL, Media, Html, PPT, TV, and real-time streaming server connection and contents are organized as one among UC, GCS, PCS, FCS and URL and in case contents consist of multi-screens, a manager can select and change a specific panel to turn on sound effect of broadcasting among a plurality of
15 panels according to his own will and it is possible to turn on volume of a panel in order to increase broadcasting effect and grasp the duration time of multimedia files in order to forecast scheduling of contents to be being played at present or to be played in future.

16. A system controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 15, wherein it is characterized in that in controlling
20 broadcasting screen, it is possible to divide a screen into a plurality of screens and each panel has panel information about NextPlay denoting a schedule to be played next time, information about END of a schedule and information about time to be being played at present and said information becomes basic information for process of urgent messages and it is possible to replay continuously the current interrupted broadcasting by using

said information and if there is a panel whose broadcasting is over earlier than other panels, then broadcasting screens according to default schedules organized previously or continuous replaying of existing broadcasting are provided selectively.

17. A system controlling and managing advertisement/broadcasting centrally based on
5 networks as set forth in claim 16, wherein it is characterized in that IBS screens consists of six panels basically and frame arrangement and broadcasting contents are organized based on advertisement efficiency and hardware specification of said IBS Terminal Server and media running and real time broadcasting are performed by consideration of hardware specification of said IBSTS and thus the phenomenon that screen becomes
10 discontinuous or system speed slows is prevented and it is possible to set up the width and height rate of said six basic panels freely in said screen organization and one among text, PPT, web text of html type, multimedia advertisement broadcasting at any place of a plurality of parted screens is arranged.

18. In an Integrated Broadcasting System (IBS) transmitting moving images according
15 to real-time/reserved schedules to output terminals of all areas or advertisement points by using a centrally controlled method based on networks including LAN, WAN and Internet, said IBS having a Content Distribution Server (CDS), a Traffic Management Server (TMS), a Security Server (SS), an IBS Control Server (IBSCS), an IBS Administrator Interface (IBSAI), an IBS Terminal Server (IBSTS) and a plurality of IBS
20 Media Servers (IBSMS), a method for controlling and managing advertisement/broadcasting centrally based on networks by using said system, said method comprising:

if information of broadcasting schedules, contents and clients are registered through said IBS Administrator Interface, a step for transmitting said information to said IBS

Control Server and storing said information in a database;

a step for monitoring by said IBSCS whether contents are changed or not based on said transmitted information and transmitting information related to said changed contents to each IBS Media Server and storing said transmitted information in a database of said

5 IBS Media Server;

a step for getting authentication of an IBS terminal through login to said IBS Terminal Server and connecting to said IBS Control Server and downloading corresponding contents through the optimal IBS Media Server and storing said contents in a database of said IBS Terminal Server; and

10 a step for controlling broadcasting screen of said IBS Terminal Server and broadcasting corresponding broadcasting contents when it becomes broadcasting time.

19. A method for controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 18, wherein it is characterized in that a transmitting process of general/urgent broadcasting schedules between said IBS Control Server and

15 said IBS Terminal Server comprises:

a step for inputting Identification and password set up when initial registration is made at an IBS terminal and demanding authentication about a demand signal of authentication, a company name and TID (terminal ID);

if said authentication is successful, a step for asking of said IBS Terminal Server to said

20 IBSCS every period whether there are broadcasting schedules in the IBS terminal to reduce server load and increase server efficiency, wherein said period can be set up freely by a manager;

a step for searching of said IBSCS a General Broadcasting Schedule Database and an Urgent Broadcasting Schedule Database in said IBSCS and checking whether there are

schedules according to said ask;

if there is urgent broadcasting as a result of said checking, a step for demanding of said IBS terminal detailed schedules about said urgent broadcasting schedules according to the present time;

- 5 a step for downloading of said IBS terminal said demanded detailed schedules; and
- if there is general broadcasting that is already being played at present as a result of said checking, a step for interrupting of said IBS terminal said general broadcasting and controlling and broadcasting new urgent broadcasting.

20. A method for controlling and managing advertisement/broadcasting centrally based
- 10 on networks as set forth in claim 19, wherein it is characterized in that an IBS terminal has panel information of each divided frame and information of broadcasting lapse time and thus said IBS terminal can provide continuity of previous broadcasting after ending of urgent broadcasting and it is possible to grasp the current broadcasting status by transmitting the status information of whether the broadcasting to be being played at
- 15 present is urgent broadcasting or general broadcasting to said IBS Control Server.

21. A method for controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 18, wherein it is characterized in that the operation flow of said IBS Terminal Server installed at each broadcasting terminal comprises:

a step for getting authentication of said IBS Terminal Server for login;

- 20 a step for checking whether there are urgent broadcasting schedules through said IBS Control Server;

if there are urgent broadcasting schedules as a result of said check, a step for downloading urgent schedules produced by an urgent broadcasting scheduler and broadcasting contents;

- a step for checking of said IBS Control Server whether there is advertisement running at present in said IBS Terminal Server;
- if there is broadcasting running at present, a step for interrupting running of current screen by said IBSCS;
- 5 a step for running urgent broadcasting;
- if there is no advertisement running at present, a step for by said IBS Terminal Server running urgent broadcasting without delay;
- a step for checking by said IBSTS whether there is organization of default pages produced previously;
- 10 if there is organization, a step for running default pages;
- if there is no organization, a step for checking by said IBSTS whether it is interrupted advertisement broadcasting or not;
- if it is interrupted broadcasting, a step for requesting by said IBSTS to run previously interrupted advertisement broadcasting;
- 15 a step for running IBS terminal broadcasting screen according to said request;
- if there is no urgent broadcasting schedules or if default pages are broadcasted or if there is no interrupted broadcasting or if said IBS Terminal Server runs advertisement broadcasting, a step for checking by said IBS Control Server whether there are general broadcasting schedules;
- 20 if there are general broadcasting schedules, a step for downloading by said IBSCS general broadcasting schedules produced by a general broadcasting scheduler and broadcasting contents;
- if there is no general broadcasting schedules or if general broadcasting schedules and broadcasting contents are downloaded, a step for checking whether there are registered

broadcasting schedules;

if there are registered broadcasting schedules, a step for running general advertisement broadcasting and terminating; and

if there are no registered broadcasting schedules, a step for terminating at once.

- 5 22. A method for controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 18, wherein it is characterized in that IBS security solution that is contents encryption process comprises:

a step for demanding authentication of open-key through one among various authentication means including Identification , password and fingerprint; and

- 10 a step for by said authenticated user connecting to a server program and using various server applications and using encryption or compressing method according to step for safe data transmission between a TCP/IP layer and application at Internet section and protecting contents and important data.

23. A method for controlling and managing advertisement/broadcasting centrally based
15 on networks as set forth in claim 18, wherein it is characterized in that a central management method of contents through said IBS Administrator Interface comprises:

a step for providing function of contents management, media management, Unit Content Management, group content management, Panel Content Management, Frame Content Management by said IBS Administrator Interface;

- 20 a step for classifying said contents into general text format files including general PPT, TXT, HTML and multimedia files including MPEG, AVI and MP3 and managing said contents;

a step for showing contents list through a contents management item and providing function of file information and file review;

a step for showing Tree Structure about contents and providing information whether corresponding files are normal or not and preview function in selecting each content at Tree Structure;

a step for providing information about whether corresponding media files are normal or

5 not, whether there are corresponding files at local, whether there are corresponding files at a server and providing version information, file information, file preview function and selecting contents and previewing said selected contents through said file preview function after downloading servers' contents files to local PCs; and

in selecting each contents at said Tree Structure, a step for providing information about

10 version, preview, whether corresponding files are normal or not, whether corresponding files are at local or not, whether corresponding files are at servers, whether basic files are normal or not, and making it possible to check whether uploaded or downloaded files operate normally, whether contents files are damaged and performing uploading or downloading again for abnormal files.

15 24. A method for controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 18, wherein it is characterized in that a management method of unit content that is minimal unit of IBS contents comprises:

a step for storing information about names of companies performing contents registration, media file names, explanation about files, display time of files, panel size
20 of width \times height, clients' company names, contents types; and

a step for registering contents at media item in registering unit contents and inputting values of other items including display time and original panel size of corresponding media files automatically.

25. A method for controlling and managing advertisement/broadcasting centrally based

on networks as set forth in claim 24, wherein it is characterized in that a frame designation method for FCS set-up in designation of IBS schedules comprises:

a step for setting a selected panel's width and height rate, contents types in panels, real names of contents files or URL, ON/OFF of volume and duration time of multimedia
5 files;

a step for letting contents types of said panels consisting of News, Web, URL, Media, Html, PPT, TV, and real time streaming server connection be registered further later and registering PCS files registered previously in selecting media type contents;

a step for providing function of icon view and list view among folder view options of a
10 Window searcher; and

a step for selecting a corresponding URL through designating a contents type to Web.

26. A method for controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 18, wherein it is characterized in that in organization of broadcasting schedules, information about broadcasting time, broadcasting panel,
15 broadcasting media type, kind of contents, ON/OFF of volume, screen rate and duration time are organized and frame size can be organized freely and broadcasting media type supports various types including News, Web, URL, Media, Html and PPT and contents are organized with UC, GCS, PCS, FCS and URL and contents can be organized into multi screens and in this case a manager can regulate volume of broadcasting screen
20 according to his will and duration time of multimedia files can be expected.

27. A method for controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 26, wherein it is characterized in that an organizing process of said broadcasting schedules comprises:

a step for registering UC being a basic element of broadcasting contents;

a step for registering GCS or PCS for grouping of UC files;

a step for registering panel playing contents, screen rate and other environments for each frame; and

a step for playing at a specific IBS Terminal Server according to said registered
5 schedules,

wherein a predetermined broadcasting organization table must be made in order to register a broadcasting schedule

28. A method for controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 27, wherein it is characterized in that in order to
10 manage broadcasting schedules, the contents of UC, GCS, PCS and FCS consisting of lists for managing predetermined broadcasting schedules are designated by the contents of company names, group names, terminals, TID being ID of a terminal for distinction and date and if corresponding broadcasting schedules are designated, then broadcasting is played at each corresponding terminal by FCS that is a designated schedule and a
15 broadcasting schedule at a desired time through terminal registration, contents registration, broadcasting schedule registration is organized.

29. A method for controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 18, wherein it is characterized in that in control process of a broadcasting screen, a broadcasting screen is organized with a plurality of
20 screens and a PCS schedule corresponding to each panel is played and each panel has information about whether there is Next Play to be played next time, whether it is END of a schedule and time information of broadcasting being played and said information becomes basic information for processing urgent messages capable of being generated during broadcasting and continuous broadcasting of the present interrupted broadcasting

is played again by using said information and if there is a panel whose broadcasting is over earlier than other panels and then broadcasting screen according to a default schedule organized previously or existing broadcasting is provided continuously and selectively.

- 5 30. A method for controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 29, wherein it is characterized in that basic OCX (OLE Control Extensions) for screen playing control comprises:

a step for adding broadcasting schedule list to OCX for driving a Media Player, OCX for driving Web Browser and other OCX for controlling broadcasting if broadcasting

- 10 schedule is received;

a step for performing of said added schedule PLAY, STOP and PAUSE commands by using outer interface;

a step for processing event process whenever said event process generating Window events is demanded; and

- 15 a step for controlling a appropriate screen component according to the kinds of contents of a corresponding panel among OCX component for screen controlling of Media moving image files being applicable diversely according to the contents to be controlled, OCX component for screen controlling of Web URL, Html and PPT files and OCX component for screen control of general *.TXT files by broadcasting schedules.

- 20 31. A method for controlling and managing advertisement/broadcasting centrally based on networks as set forth in claim 18, wherein it is characterized in that IBS screens provides six parted panels basically to construct a frame that can be expressed through various media at an IBS terminal and frame arrangement and broadcasting contents are organized by considering advertisement's efficiency and hardware specification of said

IBS Terminal Server and the effects of advertisement and broadcasting increase without discontinuous playing of broadcasting on a screen or slowing system by embodiment of proper media driving and real time broadcasting and the screen of said IBS Terminal Server can be organized by setting up the rate of width and height of basic six panels

5 freely and TXT or web document is arranged at the top area of basic six parted screens and multimedia advertisement broadcasting is arranged at two panels located at the middle area of the basic six parted screens and real time news is arranged at the bottom panel area of the basic six parted screens and a screen is parted and contents are organized to get the optimal advertisement effects but every panel supports every type

10 of broadcasting media including type, TEXT, MEDIA, Web URL, HTML, PPT and real-time news.